Cerebellar Abiotrophy (CA)

Description:

Cerebellar abiotrophy (CA), also referred to as cerebellar cortical abiotrophy (CCA), is a genetic neurological disease in certain species of animals. To date, CA is known to affect breeds of dogs and horses. The disorder manifests itself when Purkinje cells, the neurons that affect balance and coordination, are present in the cerebellum of the brain.

Cerebellar abiotrophy (CA) is a condition known to affect Arabian horses as well as Miniature horses, the Gotland Pony and possibly the Oldenburg. In most cases, foals appear normal at birth, and symptoms generally become noticeable after four months. There have been reported cases where the condition was observed shortly after birth, while others report symptoms developing after the first year.

Horses affected with CA tend to startle easily and often fall. Common symptoms include head tremor, a lack of balance and other neurological issues. Affected horses may develop a wide-based stance of the forelegs and difficulty rising from a reclining position. In horses, CA is believed to be linked to an autosomal recessive gene. This means that it is not sex-linked and the allele has to be carried and passed on by both parents in order for an affected animal to be born.

Horses that only carry one copy of the gene may pass it on to their offspring, despite being perfectly healthy themselves and having no symptoms of the disease. Because the disorder is recessive, the allele for CA may pass through multiple generations before it is expressed. CA is sometimes confused with Wobbler's syndrome, Equine Protozoal Myeloencephalitis (EPM) and injury-related problems, such as a concussion.

Test Results:

The genetic test verifies the presence of the recessive CA mutation and presents results as one of the following:

CA/CA	Affected	The horse carries two copies of the CA mutation and is homozygous for CA. The horse is affected with the CA genetic disorder
N/CA	Carrier	Both the normal and mutant copies of the gene detected. Horse is a carrier for the CA mutation, and can pass on a copy of the defective gene to its offspring 50% 0f the time.
N/N	Negative	Horse tested negative for the gene mutation that causes CA,and will not pass on the defective gene to its offspring.